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LOUISIANA'S WATER POLLUTION CONTROL
PROGRAM: AN EVALUATION AND RECOM-
MENDED PROGRAM

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**LOUISIANA'S
WATER POLLUTION
CONTROL PROGRAM**

**Evaluation and
Recommended Program**

INTRODUCTION

At a time when Louisiana is actively encouraging new industrial development in order to establish a healthier economic climate, it is most appropriate that the State also be concerned with protecting the quality of its environment. The State is rich in scenic beauty, with an abundance of water and related resources. Louisiana, by applying the same technology that has served this nation so well, has an opportunity to show that economic development and clean streams can be compatible.

Recognizing that a stronger water quality management program is needed to protect and enhance the water of her streams, Louisiana joined with the Environmental Protection Agency, Water Quality Office, in the preparation of this study. The study includes an appraisal of the current water pollution control program, and the identification and analysis of the budget, staff and programs needed for a more effective program.

A number of interviews were conducted as a part of this study and questionnaires were distributed to individuals representing a broad range of backgrounds and interests. This was done in an effort to obtain

the attitudes and views of the people of Louisiana on their water pollution control program.

This study has not been a search for villains, for all segments of society must bear some responsibility for the water quality problems facing Louisiana. The major objectives of this study are to support the State in her efforts to develop a stronger water quality management program and to provide guidance in developing the tools and technological skills necessary to implement such a program.

Louisiana is not faced with a choice between clean water and jobs. She can, and must have both. Full utilization of present technology can result in the solution of today's municipal and industrial waste problems in the immediate future. What is needed is a commitment on the part of the State and the many diverse elements in Louisiana, to protect the quality of the waters with which they have so generously been endowed. It is hoped that this joint study can provide a degree of direction to the State in developing the type of program needed, both for today and for tomorrow, if this rich heritage is to be preserved.

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SUMMARY OF RECOMMENDATIONS

BUDGET AND STAFF

Increase state budget to \$1,795,000 and staff to 138 man-years by Fiscal Year 1974.

Establish competitive salary structure.

Add more qualified professional technical personnel representing a broader range of disciplines.

WATER QUALITY PLANNING

Develop required river basin, regional and metropolitan water quality management plans on or before July, 1973.

Develop a planning assistance program to local governments.

WATER QUALITY STANDARDS

Revise, expand and update water quality standards.

WATER POLLUTION CONTROL FACILITIES

Expand the existing permit system to include effluent standards and strengthen requirements for subsurface disposal of wastes.

Strengthen and expand plan and specification review function.

Adopt legislation for mandatory certification of waste treatment plant operators.

Strengthen and expand waste treatment plant operator training and technical assistance program.

SURVEILLANCE

Increase frequency of water quality sampling program.

Expand water quality monitoring network.

Establish water quality monitoring data handling and reporting system.

Require periodic operating reports from all municipal and industrial dischargers.

Strengthen and expand municipal and industrial treatment plant inspection program.

Establish effluent monitoring system.

LABORATORY SUPPORT

Expand laboratory operations.

Strengthen analytical quality control program.

ENFORCEMENT

Expand enforcement function to effectively enforce all existing statutes.

EXECUTIVE FUNCTIONS

Develop improved program planning capability to more effectively manage available resources to accomplish objectives.

Establish mechanism for more effective development, monitoring and coordination of research and development efforts being conducted throughout the state.

Develop official interagency agreements between State departments to more clearly identify authority, responsibility and procedures.

Establish a separate public information function for water pollution control.

WATER QUALITY PROBLEMS

Louisiana is blessed with an abundance of water. Many rivers, bayous, and lakes interlace the state, draining finally into the Gulf of Mexico which forms its southern boundary. The Mississippi River is the dominant river in the state, providing a quantity of water unmatched anywhere else in the United States. This vast natural resource, with deep water ports in New Orleans and Baton Rouge, accounts in part for the rapid industrial expansion which has taken place along the banks of the lower reach of the river.

There are few grossly polluted streams in the State of Louisiana in the classical sense; i.e., low dissolved oxygen and high bacterial populations. The industrial development, however, has resulted in the discharge of virtually every conceivable type of manufacturing waste to the state's streams in alarming amounts. Approximately 75 percent of the heavy industries in the State are located on the Mississippi River below Baton Rouge. Over one-third of the State's population relies on the Mississippi for a potable water supply, and the wastes discharged by this industrial complex are the principal cause of off-flavors — difficult or impossible to remove by the normal water treatment processes — common to these drinking water supplies. Fish caught in the river generally have an oily, chemical-like taste. The long term health effects of these complex chemicals are of concern to health officials and the knowledgeable public alike. Ecologists are worried about the fate of these man-made refractory chemicals and their effects on the fish and other wildlife in the Gulf of Mexico. The brown pelican, for example, has disappeared from the Texas, Louisiana and Mississippi Gulf Coasts, apparently a victim of some toxic substance which entered the food chain.

The state's second largest industrial development is located at Lake Charles, Louisiana. The waters of the lower Calcasieu River, Calcasieu Lake and its tidal estuary are degraded by the discharges from approximately 20 major industries. Because the flows in the Calcasieu are relatively small and are tidally influenced, the effects of the pollution are more severe than that in the lower Mississippi River. High levels of oil have contaminated the river and lake bottom. Industrial mercury discharges have resulted in the contamination of crabs and finfish in Calcasieu Lake.

Two small watersheds lying east of the Calcasieu in the south central portion of the state are heavily polluted; the Vermilion River suffers from low oxygen levels caused by untreated discharges from food processing plants, and Bayou Teche is polluted by wastes from sugarcane mills and municipal discharges. Improved treatment has resulted in some upgrading of the water quality in the Vermilion River in recent years; however, both watersheds suffer from low flows and are being considered for flow augmentation.

The waters of the Pearl River which forms the eastern boundary of the state are adversely affected by discharges from a large paper mill and improperly treated municipal sewage. Low dissolved oxygens occur, but improved treatment of the paper mill wastes has resulted in some upgrading of the water quality of the river in recent years.

For many years several streams and lakes in Louisiana were severely polluted by discharges of oil field brines. The most serious salt pollution occurred in Cross Lake and Caddo Lake in Northwest Louisiana, Little River in the central portion of the state, and in the Ouachita River watershed. The increased use of subsurface brine disposal in recent years is resulting in gradual upgrading of the quality of these surface waters as brine discharges are reduced.

The Red River is Louisiana's second largest river system. It enters Louisiana in its northwest corner and crosses the state diagonally to merge with the waters of the Ouachita via the Black River and the diverted Mississippi River waters via Old River to form the Atchafalaya River. Then it parallels the Mississippi River to form an estuary second only to that of the Mississippi in size and importance. The waters of the Red River have been limited in use as a potable supply because of a high mineral content stemming from surface drainage of natural salt flats between Texas and Oklahoma. In addition to this natural pollution, portions of this stream also receive pollution from municipal and industrial discharges.

The Atchafalaya River is probably the last virgin stream in the sense of water quality in Louisiana. The Atchafalaya Basin, measuring approximately 50 miles in length by 15 miles wide, is enclosed on the east and west by levees to provide a floodway

for the diversion of Mississippi River flood waters to the Gulf of Mexico. Limited agriculture, lack of large industries, and a small population serve to preserve the quality of the water. The basin is a valuable hunting and fishing recreational area as well as a commercial source of large quantities of freshwater fish and shellfish. The principal pollution problems come from small oil spills from the extensive oil well drilling operations and waste discharges from the Morgan City - Berwick area which have resulted in the closing of the Pointe A'fer shell reef. Further development of the flood control capabilities threaten many of the other uses of the basin.

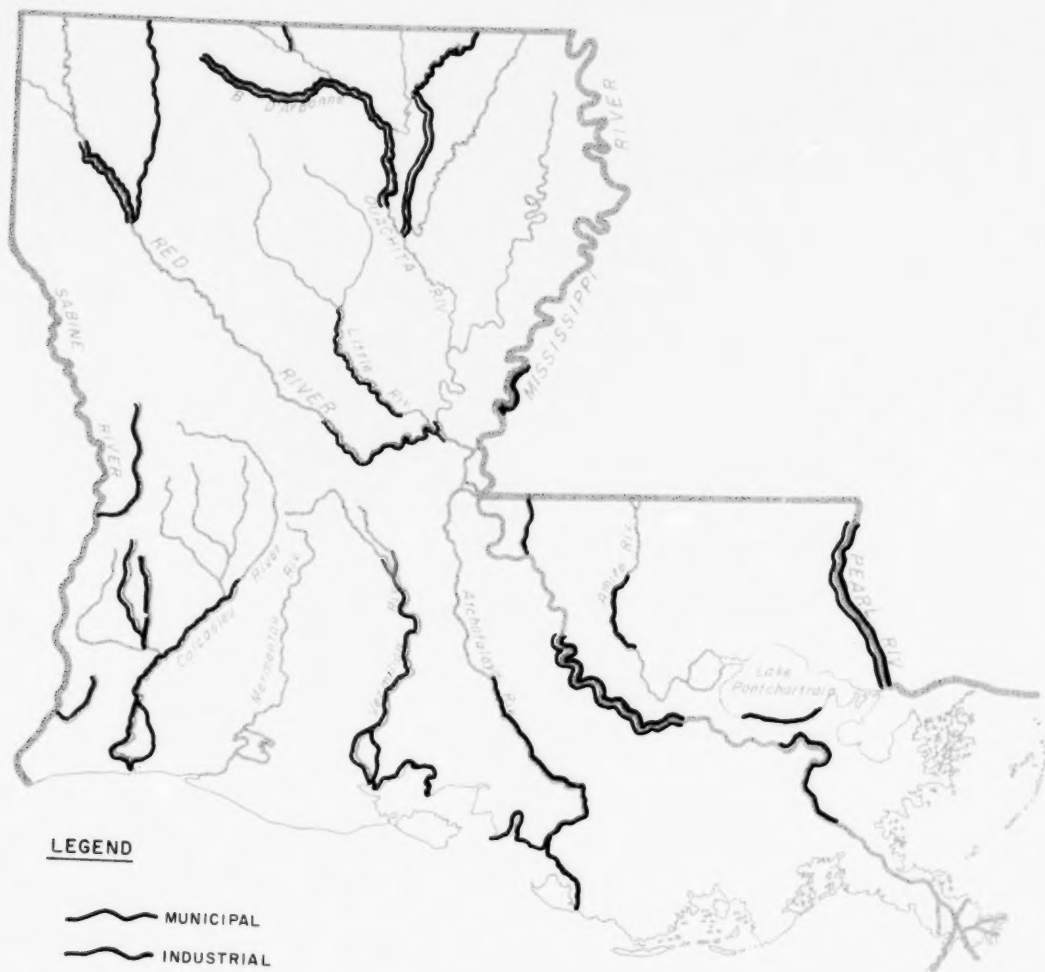
Lake Pontchartrain, which forms the northern limits of the City of New Orleans, is the state's largest lake. For the most part, its waters are fresh, being fed by several high quality streams such as the Bogue Chitto, Tangipahoa, Amite, and Tchefuncte, and are relatively free from pollution. The waters become brackish near its Gulf outlet. The lake is a valuable recreational resource. During recent years public beaches in New Orleans have been closed periodically because of high bacterial counts resulting from domestic sewage contamination of storm water. If plans to construct salt water barriers and hurricane protection structures in the outlets of the lake to the Gulf are implemented, changes in the entire ecology of the lake may occur.

Pesticides are a recurring water pollution problem since much of the state is agriculturally oriented. Minor fish kills occur throughout the growing season, particularly in the sugarcane growing areas; however, there have been no recurrences since 1964 of the massive endrin-caused fish kills in the Mississippi and Atchafalaya River estuaries.

Pollution of Louisiana's coastal waters results largely from oil field operations. Minor oil spills from drilling operations and leaks from pipelines and barges are an everyday occurrence while near disasters like the Chevron and Shell fires in 1970 are a constant threat to the aquatic environment. Improper disposal of spent drilling muds are a major cause of oyster bed pollution. Several areas of oyster production along the coast are polluted by sewage from coastal communities and fishing villages.

It should be evident from the above that the water pollution problems in the state are diverse and complex; however, they are not insurmountable. A concerted effort of State and Federal water pollution control agencies is necessary to allow the continued use and development of Louisiana's vast water resources by and for all of the people.

WATER POLLUTION PROBLEMS



HISTORY

The following chronology highlights the development of Louisiana's water pollution control program.

- 1855** — State Board of Health created (first board of health in U.S.)
- 1898** — Legislation enacted prohibiting the disposal of dead animals into waters of the state, making such action a criminal offense.
- 1906** — Legislation enacted prohibiting the contamination of public water supplies, making such action a criminal offense.
- 1912** — Department of Conservation created with broad powers for the "preservation, replenishment and regulation of all natural resources of the state."
- 1921** — Old State Board of Health abolished and new Board created with authority to promulgate a State Sanitary Code containing rules, regulations and ordinances for "the improvement and amortization of hygienic and sanitary conditions of the State."
- 1924** — Legislation enacted making the drainage of oil, salt water, or noxious/or poisonous gasses or substances into natural streams in quantities sufficient to destroy fish a criminal offense.
- 1932** — Legislation enacted prohibiting the pollution of the waters of the State and making it a criminal offense to discharge or permit to be discharged any substance which kills fish or renders the water unfit for the maintenance of the normal life of fish in such waters.
- 1940** — Louisiana Stream Control Commission created as an ex officio, non-budgeted, agency responsible for the prevention of harmful pollution of waters of the state and coastal waters of the Gulf of Mexico and the regulation and control of public and private water disposal into any of such waters.
- 1944** — Constitutional amendment replaced former Department of Conservation by creating two new departments (Department of Wild Life and Fisheries, and Louisiana Forestry Commission) and re-creating the Department of Conservation. All functions of the former Department of Conservation were transferred to the new departments in so far as they related to the respective functions of the new departments.
- 1951** — Louisiana Stream Control Commission issued a regulation establishing a permit system for control of industrial wastes, and providing for the submission of engineering reports describing treatment systems or system modifications proposed for construction.
- 1953** — Stream Control Commission adopted rules governing disposal of waste oil, oil field brines, and all other materials resulting from drilling for, production of, or transportation of oil, gas or sulphur.
- 1955** — Stream Control Commission adopted an order to require treatment and control of wastes from sugar mills.
- 1958** — Establishment of a statewide water quality monitoring network.
- 1960** — Louisiana State Department of Health established a "Waterworks Warning Network" to safeguard the quality of raw water withdrawn for public use from the Mississippi River from deterioration resulting from accidental discharges by industries.

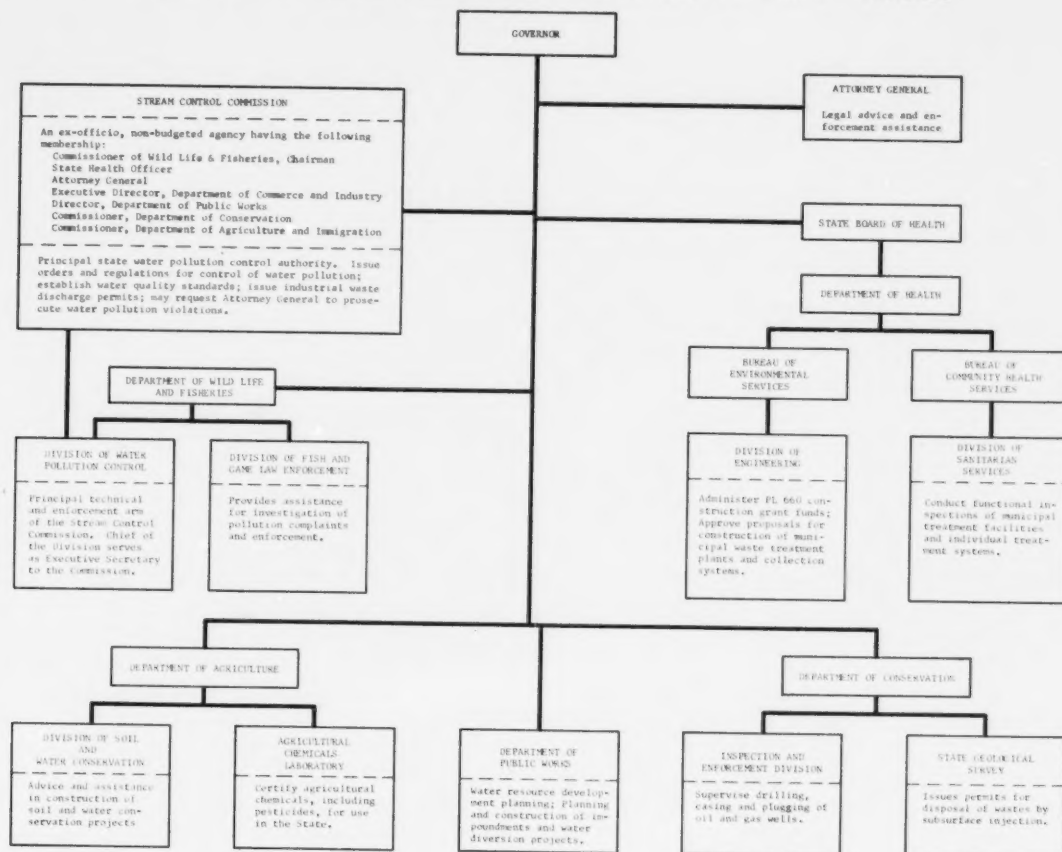
- 1964** - The Stream Control Commission issued an order to control the discharge of oil and oil field brines from the oil and gas fields of Caddo-Pine Island, Greenwood-Waskom, Longwood and Rodessa and prevent their discharge to Cross Lake, Caddo Lake, Black Bayou Lake and Twelve Mile Bayou.
- 1966** - The State Board of Health adopted a resolution opposing any existing or new discharge of untreated or inadequately treated sewage and directed that such discharges be eliminated or prevented.
- The Stream Control Commission issued an order to control oil and oil field brines in the parishes of Grant, Winn and LaSalle, and prevent their entrance into streams in the area.
- 1967** - The State Sanitary Code was amended to restrict the use of septic tanks and require the development of community facilities where feasible.
- 1968** - Louisiana's Water Quality Standards were approved by the Secretary of the Interior with certain exceptions.
- The Stream Control Commission issued an order prohibiting the discharge of oil field wastes to the waters of the State with certain exceptions.
- 1970** - Additional legislation to regulate the discharge of wastes to the waters of the state was enacted by the Louisiana Legislature. Among the more important were statutes to: prohibit the discharge of untreated wastes into the Mississippi River, providing civil penalties and injunctive procedures; increase the penalties for negligently, willfully or carelessly causing pollution of the waters of the state; set penalty for every person who violates pollution laws and provide for a fine for each offense for each day committed.
- Legislation was also enacted to: establish a Joint Legislative Committee on Environmental Quality to study all legislation on control of pollution; establish the Louisiana Natural and Scenic Rivers System; and authorize the State to make grants to any parish or political subdivision to pay a portion of the cost of water pollution control projects.

PRESENT
WATER POLLUTION CONTROL PROGRAM
APPRAISAL AND FINDINGS

ORGANIZATION
BUDGET AND STAFF
PROGRAM FUNCTIONS
EXECUTIVE FUNCTIONS

ORGANIZATION

PRESENT WATER QUALITY AND RELATED FUNCTIONS OF STATE AGENCIES



The State's water pollution control activities are performed by six different agencies and the Attorney General. The Louisiana Stream Control Commission (an ex officio, non-budgeted agency) is the principal agency responsible for the water pollution control program of the State, and performs both regulatory and coordination functions. The Commission is, by statute, composed of the Chief Administrators, or their designees, of the Department of Wild Life and Fisheries, the Department of Agriculture, the State Department of Health, the Department of Public Works, the Department of Conservation, the Department of Commerce and Industry, and the Attorney General. The Commissioner of the Department of Wild Life and Fisheries, as ex officio Chairman of the Commission, is charged with the responsibility of enforcing and administering the rules, regulations and orders of the Commission and exercises general supervision of the State's water pollution control laws. The Division of Water Pollution Control of

the Department of Wild Life and Fisheries (DWL&F) serves as the primary technical and enforcement arm of the Commission and the Chief of the Division serves as its Executive Secretary. The Commission's regulatory functions are directed primarily toward control of industrial wastes.

Except for the Department of Commerce and Industry, all of the member agencies which make up the Stream Control Commission exercise some degree of water pollution control responsibility. For example, the Department of Conservation, by virtue of its statutory responsibility for conserving the natural resources of the State (specifically minerals, oil and gas), supervises the drilling, casing and plugging of oil and gas wells, and is vested with authority to control pollution from wastes produced in connection with such operations. The Department's Inspection and Enforcement Division works closely with the Division of Water Pollution Control

(DWL&F) to control pollution from oil field brines. The Department is also responsible, through its Geological Survey Division, for developing the groundwater resources of the State and administers a permit system for the disposal of wastes by subsurface injection. This activity is becoming increasingly important as more and more industries utilize injection wells as a means of waste disposal.

The Department of Health's water pollution control activities are centered on municipal waste sources. The Bureau of Environmental Health is the focal point of the Department's efforts. Among other activities, the Bureau administers P.L. 660 construction grant funds, reviews and approves plans and specifications for municipal sewage treatment projects, provides training opportunities for municipal treatment plant operators, coordinates the Department's operation and maintenance inspection program, and many other activities related to control and treatment of domestic wastes.

In addition to the functions discussed earlier, the Department of Wild Life and Fisheries performs other activities related to water pollution control. As the agency responsible for the preservation and propagation of the State's wild life and fisheries resources, virtually every facet of its program is related, in some manner, to water quality. The Department operates the State's principal water quality monitoring network, and, through its Enforcement Division, provides assistance for investigating pollution complaints, fish kills, and enforcement actions.

The Department of Agriculture is another State agency having water pollution related responsibilities. The Department provides technical and financial assistance to local Soil Conservation Districts for soil and water conservation projects and has responsibility for certifying agricultural chemicals, including fertilizers, pesticides and herbicides, for use within the state. Since agricultural return flows in the form

of both surface runoff and subsurface drainage from agricultural areas can and does provide a mechanism for transporting such chemicals to the streams and waterways of the state, the Department sometimes conducts pesticide monitoring to determine the type and amounts of pesticides present in the streams.

The Department of Public Works' activities related to water pollution control are twofold. The agency is responsible for the planning and construction of impoundments and water diversion projects, and is the state agency having primary responsibility for water resource development planning. Recently, the Department has become more directly involved in water quality control, having been designated the State agency responsible for water quality management planning in the Sabine River Basin.

Any agency responsible for regulatory functions needs a strong enforcement capability that includes adequate legal counsel. In carrying out its enforcement responsibilities the Stream Control Commission relies on the Attorney General's office for legal advice and assistance.

In general, then, the agencies represented on the Stream Control Commission have responsibility for controlling and preventing water pollution from the sources they were designed to regulate, while the Stream Control Commission provides the mechanism for coordinating the State's total water pollution control effort, is the State's principal water pollution control authority, and, acting through the Department of Wild Life and Fisheries, regulates industrial waste discharges to surface waters. A good working relationship exists between the agencies. They cooperate, within their limits of available manpower and funds, in conducting pollution investigations and field studies, and coordinate their activities in situations where overlapping responsibility and jurisdiction occur.

BUDGET AND STAFF

Effective accomplishment of the many activities and functions necessary to protect water quality and control water pollution requires adequate funds and personnel, particularly technically qualified professionals. The diversity and complexity of water pollution problems requires a wide variety of staff, i.e. engineers, planners, geologists, chemists, aquatic biologists, bacteriologists, economists and other professional competencies. In addition, adequate legal staff are required to carry out the State's regulatory efforts. Sufficient funds must be available both for salaries and for equipment and facilities to support the State's pollution control program.

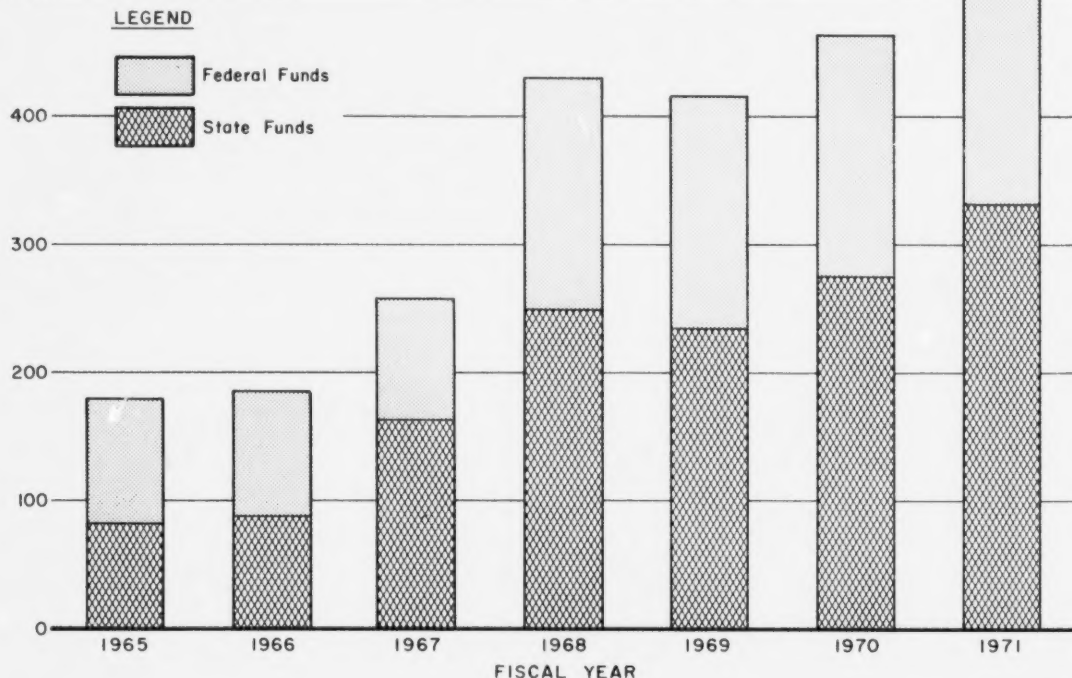
During recent years, while Louisiana's water pollution problems have become more complex and extensive, the State's expenditure of resources (money and

manpower) has shown only a gradual increase. In Fiscal Year 1968, combined expenditures of the Division of Water Pollution Control (DWL&F) and the Bureau of Environmental Health (SDH) amounted to about \$249,800 of state funds and \$178,900 of Federal funds (a total of \$428,700). For Fiscal Year 1971 State expenditures will be about \$331,500 while Federal funds will amount to \$184,100. Increased State spending for water pollution control during the FY 1968-1971 period has averaged about \$27,000 per year, barely keeping pace with rising costs. During the same period the man-years of effort attributed to water pollution control by the two principal agencies has increased from 28 (19 full-time staff) to 50 (26 full-time staff).

STATE WATER POLLUTION CONTROL EXPENDITURES*

THOUSANDS OF DOLLARS
600

* Expenditures by Department
of Wild Life and Fisheries
and Department of Health

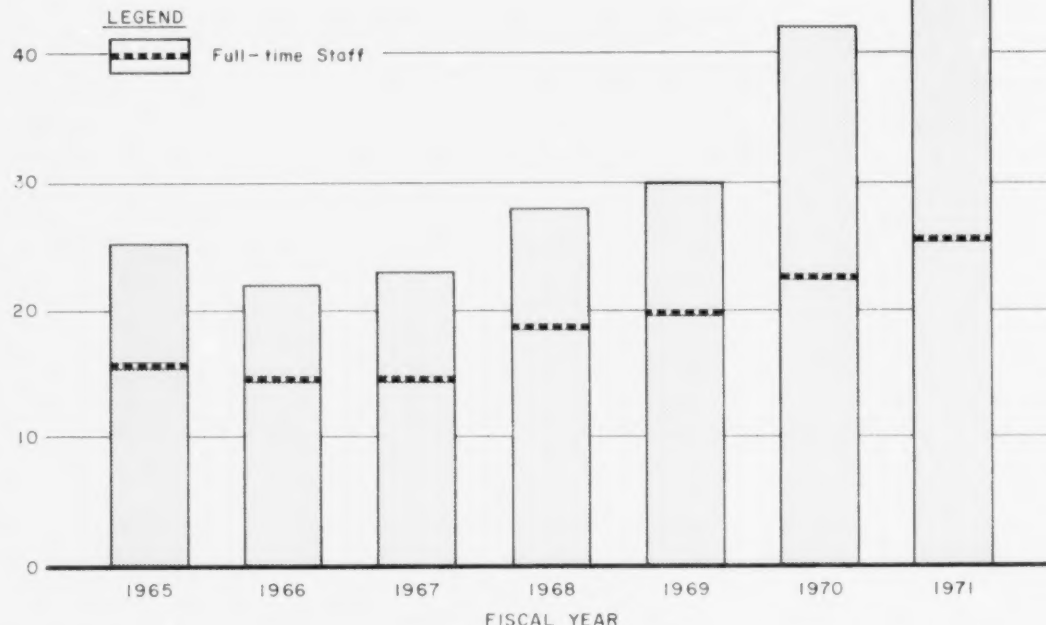


STATE WATER POLLUTION CONTROL STAFF*

MAN-YEARS ASSIGNED

60

* Man-years of effort attributed to water pollution control by Department of Wild Life & Fisheries and Department of Health

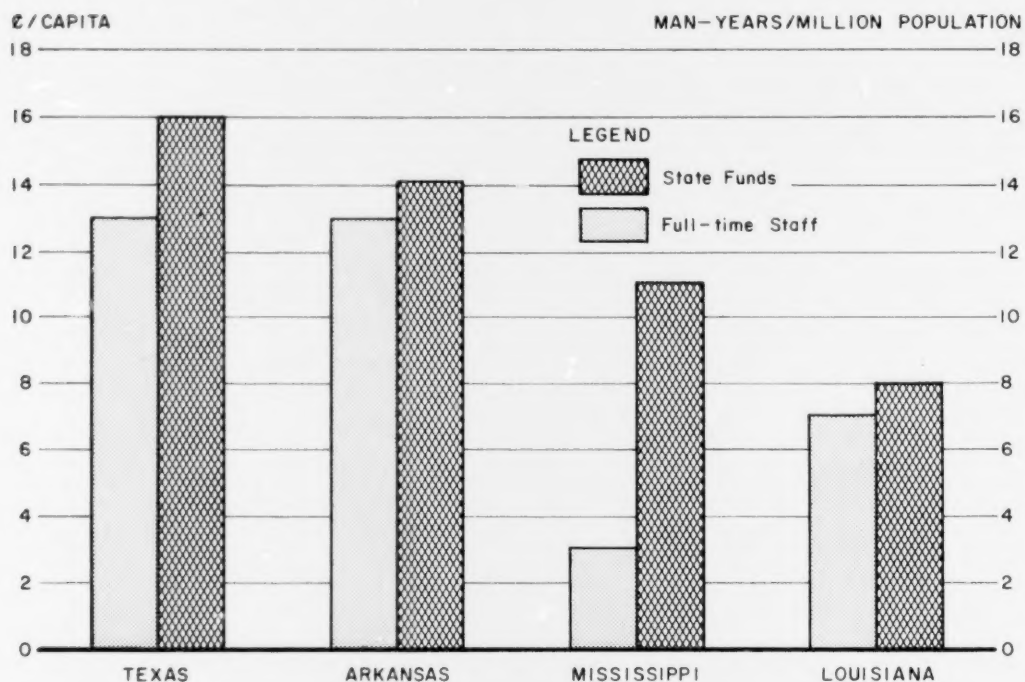


When compared to adjoining states, Louisiana's program ranks below average in terms of per capita expenditures of both manpower and dollars for water pollution control. In 1971 State expenditures will amount to about \$0.08 per person and about 7.0 man-years of full-time staff per million population while adjoining States are committing an average of \$0.11 per person and over 12 man-years of full-time staff per million population. Only Mississippi spends less per capita (\$0.03) than Louisiana for water pollution control. When it is recognized that the water pollution control programs of the adjoining States also need additional budget and staff, the Louisiana program needs become more apparent.

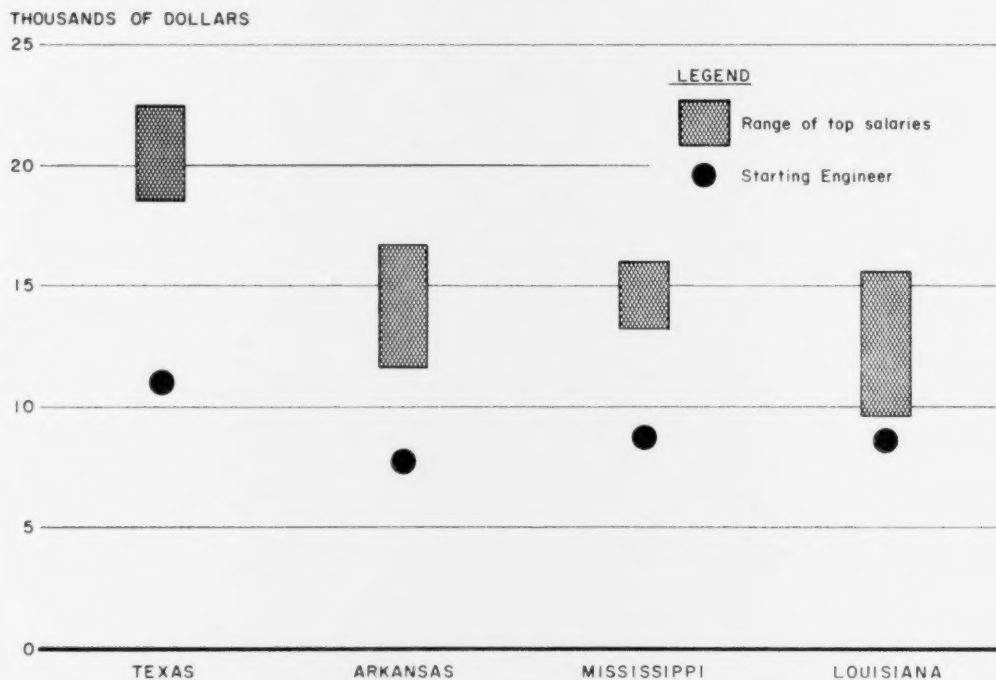
It has been difficult for the principal water pollution control agencies to recruit and retain the technical

staff required to solve the many complex water quality problems. Probably the single most significant factor responsible for this situation is the low salary schedule for professional personnel under the State's civil service system. When comparing the salaries of the top two positions in the State water pollution control agencies, Louisiana again ranks last to its three neighbors. Louisiana's colleges and universities are producing many qualified technicians, engineers and other scientists needed to solve the many environmental problems facing the State today; however, competition from private industry and other public sectors with higher pay scales makes it difficult for the water pollution control agencies to obtain the services of these graduates.

COMPARISON OF STATE EXPENDITURES FOR WATER POLLUTION CONTROL



ANNUAL SALARY COMPARISONS FISCAL YEAR 1971



PROGRAM FUNCTIONS

**WATER QUALITY PLANNING
WATER QUALITY STANDARDS
WATER POLLUTION CONTROL
FACILITIES
SURVEILLANCE
LABORATORY SUPPORT
ENFORCEMENT**

WATER QUALITY PLANNING

Planning is the process of thinking ahead. Plans are developed to describe an orderly course of action to meet anticipated changes and to produce desired results. Effective water quality management must be predicated upon a solid planning base that has made adequate provision for the future growth of waste loads, population, industry and water use. Otherwise, future developments may more than offset the gains that today's action programs may achieve in the years immediately ahead.

A key element in the development of an effective water quality planning program is the proper utilization of the water quality standards. The water quality standards represent a systematic nationwide strategy for water quality management. A strong State planning program must utilize the standards as objectives in the development of plans which, when implemented, will control existing pollution sources and prevent pollution before it occurs.

The Environmental Protection Agency grants program for the construction of treatment facilities has been operating under new regulations since July 2, 1970. The new regulations are directed toward obtaining more effective coordination between the planning and construction of treatment works by requiring that, within a river basin, each treatment facility be part of a basinwide plan for pollution abatement, and, within a given city, that each plant be included in a metropolitan or regional plan. These new planning requirements have placed additional and immediate demands upon the State's very limited planning resources.

Until recently, there were no State personnel assigned to water quality management planning on a full-time basis. The Bureau of Environmental Health (SDH) has lately assigned one staff member to develop the basinwide and regional plans necessary to comply with the new Federal planning requirements. Although no planning personnel are available, the Division of Water Pollution Control (DWL&F) is cooperating in this effort. Unless these requirements can be met, the communities of Louisiana cannot continue to be eligible for Federal construction assistance under P.L. 660.

A number of interrelated planning activities are underway in the State. Louisiana is participating in river basin and water resource planning in cooperation with other State and Federal agencies. These interagency studies result in comprehensive water and land related resource plans that lay out a framework for future river basin development. One such study is being conducted on the Lower Mississippi River under the auspices of the Federal Water Resources Council. It is important that water quality considerations be an integral part of such planning. The lack of sufficient resources and planning staff limits the State water pollution control agencies' participation in these studies.

The Department of Public Works is presently engaged in the development of a State Water Plan for Louisiana. The Division of Water Pollution Control (DWL&F) and the Bureau of Environmental Health (SDH) have participated in this study by providing water quality and related data.



WATER QUALITY STANDARDS

The establishment of water quality standards in response to the Water Quality Act of 1965 required the States to make some crucial decisions involving the uses of their water resources, the quality of water required to support those uses, and the pollution abatement measures required to meet the adopted criteria. Thus the water quality standards are the cornerstone of a State's program of water pollution control and provide the framework within which all program functions are conducted.

Louisiana's water quality standards for interstate, intrastate, and coastal waters were adopted June 27, 1967. Interstate and coastal water standards were approved, with certain exceptions, by the Secretary of the Interior on February 12, 1968. Efforts to resolve the exceptions are continuing. Louisiana's Water Quality Standards Implementation Plan requires that all municipal and industrial wastes receive secondary treatment, or its equivalent, not later than the end of 1972. Municipalities having waste treatment needs are identified, levels of treatment to be provided are described, and time schedules for construction of improvements are defined. The Implementation Plan also lists all permitted industrial waste discharges, identifies existing treatment practices and prescribes a procedure for reviewing each industrial discharge permit to identify inadequate waste treatment practices and whether additional treatment will be needed. The Stream Control Commission has recently completed a review of over 180 industrial permits to establish treatment needs and time schedules for corrective action.



To be fully effective and serve their intended purpose, water quality standards must reflect current water uses and pollution control technology. Standards should not be viewed as static, but must be periodically upgraded, improved and strengthened; otherwise they become outmoded and of little value. The State's present system provides for broad controls of many pollution sources; however, recent developments have demonstrated a need for the establishment of criteria for mercury, lead, arsenic, and other heavy metals, and strengthening of the implementation plan to include corrective measures beyond conventional secondary treatment.

WATER POLLUTION CONTROL FACILITIES

Financing

Plan Review

Permits

Operator Training and
Certification

Technical Support

The waste treatment plant is the primary tool to control pollution from industrial and municipal sources. Presently it is estimated that 45 percent of Louisiana's urban population is served by secondary treatment facilities (settling plus biological treatment), 15 percent is served by primary treatment (removal of settleable solids), while the sewage from 40 percent of the urban population is discharged untreated to the surface waters of the State. Further, it is estimated that 65 percent of the industrial discharges receive less than adequate treatment.

The water quality standards require that all municipal and industrial discharges provide a minimum of secondary treatment, or its equivalent, by the end of 1972. Thus, the waste treatment facilities serving about 55 percent of the State's urban population are inadequate. To meet the time schedule for complete secondary treatment, approximately 80 new or expanded treatment facilities must be constructed during the next 1½ years at an estimated cost of 41 million dollars.



The following State activities are necessary to properly perform this program element: review plans and specifications of all proposed waste treatment facilities; provide financing assistance; provide an adequate permit system, and provide operator training and certification and technical support of plant operators.

FINANCING

The municipal treatment plant construction program has, in the past, been hampered by a lack of funds at the local government level. High interest rates were a problem in 1969 and 1970, especially with Louisiana's six percent bond issue ceiling. A number of communities which had voted bonds for treatment plant construction have been unable to sell the bonds.

The Federal Water Pollution Control Act provides grants to state and local bodies of 30-33 percent of the cost of constructing sewage treatment facilities. The Federal percentage can be increased to 50-55 percent where a state government supplements Federal grants by paying 25 percent of the construction cost. Until recently, Louisiana did not provide state grants to local public bodies for this purpose; however, in 1970 the Legislature enacted legislation to provide State grants. The legislation

and the procedures established to administer the grants have been determined to be in conformance with applicable Federal requirements. Thus municipalities are now eligible to receive increased Federal grants and reduce their local share to only 20 percent of the project cost.

Even though local funding problems have occasionally caused some delay, local governments have made progress toward providing improved treatment for municipal wastes. Between 1957 and 1970 a total of 190 waste treatment projects were constructed at a total cost of nearly \$110 million. During the past five years annual allotments of Federal funds were completely utilized by local applicants on a 30-33 percent grant basis. This situation changed for the fiscal year beginning July 1, 1970, as Congress allotted Louisiana \$14,500,900, representing a sharp increase from the approximately \$4 million per year for the two previous years. This increased level of Federal funding is expected to continue and it now appears that Louisiana will be able to utilize less than half of the \$14.5 million unless the State's grant program is implemented.

PLAN REVIEW

Review of plans and specifications by the State is essential to determine if proposed treatment facilities will produce an effluent quality and provide the degree of treatment efficiency necessary to protect stream standards. These reviews include checking engineering and hydraulic details and organic loading.

Industries submit engineering reports describing proposed waste treatment processes to the Stream Control Commission as part of their application for a permit to discharge to surface waters. The reports are reviewed by the staff of the Division of Water Pollution Control (DWL&F) and recommendations as to adequacy of treatment are furnished the Commission for consideration in issuing permits.

The Bureau of Environmental Health (SDH) reviews and approves engineering reports and plans and specifications prior to construction and operation of community treatment facilities. The Bureau also reviews and approves projects for production, treatment and distribution of municipal water supplies, for construction of swimming pools and related bathing facilities, water impoundments, and sewage disposal facilities for schools, subdivisions, motels,

trailer courts, and other sources of domestic wastes. Parish sanitarians are responsible for individual waste disposal systems, primarily septic tank systems.

PERMITS

Permits are required for the discharge of industrial wastes to ground or surface waters of the State. The Stream Control Commission issues permits for the discharge of such wastes to surface waters and approves their disposal by subsurface injection (permits for subsurface injection are issued by the Department of Conservation through the Geological Survey Branch). Permits for discharging industrial wastes to surface waters establish the number of outlets, the volume of the wastes and the concentrations of constituents in the wastes. Should an industrial process be expanded, modified or altered such that the volume or constituents of the waste are changed, a new permit must be obtained from the Commission.

If the terms or conditions of the permit are violated, the Commission may suspend or revoke the permit, issue an order to cease pollution and take remedial action to correct deficiencies, or request the Attorney General to take legal action. Similar actions may be taken against industries discharging wastes without a permit. Civil penalties, including fines, may be imposed for causing pollution or for discharging without a permit, and each day constitutes a separate offense.

The Sanitary Code promulgated by the Louisiana State Board of Health requires approval from the Department of Health prior to construction of municipal sewerage facilities. A letter of plans approval is issued upon submission of satisfactory plans and specifications for the proposed facilities. Additions, expansions or alterations in treatment methods are also subject to departmental approval. While this does not constitute a "permit to discharge" in the narrow sense, the fact that treatment facilities are reviewed for compliance with accepted design practice; effluent quality, quantity and point of discharge are considered; and specific requirements met prior to issuance, makes the letter of approval, in effect, a permit.

Effective administration of a permit system requires extensive legal, engineering and other professional manpower to insure that waste load limits allowed

are sufficiently stringent to meet the water quality standards established for the receiving stream. Further, in the absence of effluent standards, each permit application is "examined on its own merits". This means that the terms and conditions of the permit, especially for industries which often have complicated waste control problems, must be subjected to extensive evaluation to, among other things, insure equitable treatment of all applicants.

The permit systems in operation in Louisiana offer the basis for great flexibility in the enforcement and regulation of water quality. At present, 98 percent of the existing municipal discharges and 90 percent of the existing industrial discharges are under permit from the State. The percentage of industrial discharges does not include those going to municipal sewage treatment plants or storm sewers. The percentage for municipal discharges includes communities that discharge raw or inadequately treated sewage to the streams.

OPERATOR TRAINING AND CERTIFICATION

The training of waste treatment plant operators is essential to assure good operation and maintenance of a waste treatment plant. Training also provides a means of keeping the operator abreast of the latest technical developments in his field. Each treatment plant costs thousands of dollars, therefore, it is essential that qualified personnel are available to properly operate the plant to achieve the maximum efficiency of which the plant is capable.

At present, the main emphasis in the training of waste treatment plant operators is a 44-week course conducted by the Health Department under the FWQA national contract program. About 20 operators in the Greater New Orleans area completed the course in 1970 and an additional 20 operators are presently enrolled for 1971. The training covers basic mathematics and science and progresses through plant operations, including on-the-job training for each trainee.

Other training opportunities are afforded by 16-week training courses, begun during the fall of 1970, being conducted at Baton Rouge, Lafayette, Monroe and Lake Charles. These courses, directed at raising the employment level of under qualified persons, are being conducted under the Department of Labor's Manpower Development and Training Administration.

Attendance at these courses ranges from 10-15 trainees. It is estimated that about 70 individuals will receive operator training during the current year under these programs.

Mandatory certification of waste treatment plant operators is a method by which it can be reasonably assured that waste treatment plant operation will be performed by qualified personnel. This is achieved by giving examinations to those wishing to be certified and requiring that municipalities employ only certified operators. Louisiana does not have such a requirement. Instead, only a voluntary certification system exists. Qualifying examinations are given at least twice yearly, under the supervision of the State Department of Health.

TECHNICAL SUPPORT

Technical support is that assistance rendered to waste treatment plant operators who are having operating difficulties or to those who need technical advice on water pollution control in the state.

Technical support in the form of a continuous flow of pertinent information is needed to inform the operators of the latest advances in operation and maintenance technology and other aspects of waste treatment plant management. The Department of Health provides technical assistance to municipalities through the Bureau of Environmental Health's Regional Engineers located at Monroe, Lafayette and New Orleans, and through the Bureau of Community Health Services.

Technical assistance to industrial waste treatment plant operators requires technical personnel trained in the complex field of industrial waste treatment. The Division of Water Pollution Control (DWL&F) does not routinely provide technical assistance to industrial plant operators.

SURVEILLANCE

Water Quality Monitoring Inspections

Effective implementation and enforcement of water quality standards and discharge permits, administration of grants, preparation of reports, assessment of treatment needs and efficiency, and operator

training needs require accurate fact finding and readily available data. Specific data on the status and effectiveness of municipal and industrial waste treatment facilities are needed. Collection, evaluation and dissemination of data on chemical, physical, and biological water quality and other information relating to water pollution is an essential element of a state water pollution control program.

All of the above constitutes a water quality surveillance program which essentially consists of water quality monitoring; inspection of all waste treatment facilities, effluent monitoring; investigation of spills of oil and other materials and citizens' complaints.



WATER QUALITY MONITORING

Regardless of the number of treatment facilities constructed or the number of basin management plans completed, program effectiveness is measured, in the final analysis, in terms of actual water quality. This can only be achieved through adequate monitoring. Monitoring involves the collection, analyses and evaluation of water samples, either by means of electronic monitors or manually. Water quality cannot be effectively managed unless we know what it was, what it is, and what it can be. Changes cannot be detected, natural or man-made, desirable or undesirable, without repeated observations and established baselines. An effective, well-designed monitoring program is essential in setting water quality objectives, creating policing mechanisms and evaluating performance.

Louisiana has approximately 10,000 miles of streams and rivers, 550 miles of coastline, thousands of square miles of tidal marshlands and innumerable bays and estuaries. Water quality monitoring of these waters is conducted by both State and Federal agencies. The Department of Wild Life and Fisheries operates the State's primary water quality monitoring network consisting of 66 stations on 33 streams while the Environmental Protection Agency maintains a network of 13 stations on interstate streams. In addition to these monitoring efforts the Department of Health collects radiological and bacteriological samples at 19 stations and at various raw water intakes throughout the State while the Department of Agriculture sometimes conducts special purpose monitoring to determine pesticide levels. The Department of Conservation and other State agencies also monitor water quality; however, these efforts are generally of short duration and are directed toward obtaining specific, project related data.

The number of agencies engaged, to varying degrees, in water quality monitoring creates problems in coordinating and exchanging data. The State has not participated in the national water quality data storage and retrieval system (STORET) and monitoring data accumulated by one agency is not routinely furnished to others. Recently, however, computer terminals have been made available to the Division of Water Pollution Control (DWL&F) and the State Department of Health to enable these agencies to participate in the STORET system.

There has been little expansion in the Department of Wild Life and Fisheries' monitoring network since 1967. Insufficient funds and personnel are largely responsible for the lack of expansion.

TREATMENT PLANT INSPECTIONS AND WATER QUALITY INVESTIGATIONS

Inspection and evaluation of municipal waste treatment plants and industrial waste control facilities is a program function of great importance. Inspections are necessary to ascertain the effectiveness of operation and maintenance of the facilities, to assure compliance with the construction plans and specifications, to assess operator training needs and to insure continued compliance with implementation plans for meeting the water quality standards and permit conditions.

It is indeed impractical to spend millions of dollars on treatment facilities but not conduct adequate inspections to assure they are being operated properly. Adequate inspections require trained personnel capable of performing tests to ascertain plant performance and locate and identify operating problems. Inspections of industrial treatment facilities in particular, are more meaningful when performed by qualified personnel with knowledge of the various manufacturing processes.

In Louisiana, the surveillance of industrial waste treatment plants is carried on by means of periodic reports from the plant operators and by inspections by Division of Water Pollution Control (DWL&F) personnel. Monthly operating reports are furnished on a voluntary basis, from 68 of the nearly 200 industries under permit from the Stream Control Commission. Plant inspections are performed from time to time by Division personnel but are not as frequent as desired due to the lack of personnel. Effluent samples are sometimes obtained during inspections and are analyzed at the Division's Laboratory in Baton Rouge. Results of the plant inspections along with any effluent analyses are submitted in the form of a written report to the Division Chief.

The control over municipal waste treatment plants is maintained by the State Health Department's Bureau of Environmental Health. Monthly operating reports are received from 47 of the State's approximately 300 municipal treatment plants. Inspections are performed periodically by parish sanitarians, regional engineers and engineers from the Bureau's central office in New Orleans. Sanitarian's inspections are aimed primarily at noting obvious operational problems, the general condition of the plant, and equipment failures. Regional and staff engineer's inspections though not as frequent are more detailed. In addition to noting operational and maintenance deficiencies, possible corrective measures are suggested, tests of plant performance are carried out and effluent samples are collected for analysis. Serious deficiencies are brought to the attention of responsible community officials along with recommended corrective actions. Again, inspections of this nature are performed less than once per year for most facilities due to a lack of personnel.

The regulations of the Stream Control Commission require that all spills and accidental discharges to State waters be reported to the Chief of the Division of Water Pollution Control (DWL&F). If the situation

warrants, a thorough investigation is made of the effects on the stream and the cause of the spill. Local pollution cases and citizens' complaints are also investigated by Division personnel.

In 1960 the Department of Health, in cooperation with the Stream Control Commission, water works operators and officials, and industries, established a "Waterworks Warning Network" for the Lower Mississippi River. Prior experiences of almost complete deterioration of Mississippi River water quality from the standpoint of taste and odor due to accidental discharges by industry, indicated the need for a warning system so that all water plants could take necessary precautions to produce the best water possible in case of such a discharge. The warning network established specific procedures to be followed and persons to be contacted in case of a reported discharge. Although the original plan has operated satisfactorily, it has been modified several times to improve the warning procedures, and recently to include a mechanism for notifying water plant operators that the danger has passed.

Adequate performance of all the above activities require many qualified technical personnel. The State's present resources are inadequate to meet this demand.

LABORATORY SUPPORT

No pollution control program can be better than the available laboratory resources. The Department of Health maintains regional laboratories in Shreveport, Monroe, Alexandria, Lake Charles, and Lafayette. The Department's central laboratory is located in New Orleans. During 1970 a total of 9.0 man-years of laboratory effort were attributed to water pollution control activities.

The Division of Water Pollution Control (DWL&F) maintains a central laboratory facility in Baton Rouge and two district laboratories, one at Monroe and the other at Lake Charles. Three of the Division's 22 persons assigned to water pollution control are laboratory personnel.

The Laboratory operations support all the other functions of the water pollution control program. Practically all enforcement activities must be supported by analytical data. Although generally well equipped, Louisiana's laboratories are critically short of qualified technical personnel.

ENFORCEMENT

A strong, effective, and equitable regulatory effort is an essential element in the State's water pollution control program. Strict standards and strict enforcement are necessary — not only to assure compliance, but also to assure that the costly effort of pollution control is achieved on a uniform and fair basis for all municipalities and industries.

Generally, Louisiana has an adequate legislative base to control water pollution. The basic tools for enforcement and regulation are public health laws, the water pollution control laws, and the water quality standards. The water pollution control laws give broad powers to the Stream Control Commission to set rules and regulations, act as an appeal board, issue orders, seek injunctions and take necessary actions to control waste discharges to surface waters and prevent stream pollution.

Violations of the water pollution control laws and regulations which result in pollution are punishable by fines up to \$10,000. This involves detailed legal procedures and requires accurate technical data to support the legal action.

The Attorney General's office furnishes legal advice and assistance to the Commission and is responsible for enforcing all laws pertaining to water pollution control as well as other environmental protection laws. There is presently only one attorney assigned to this effort.

Louisiana does not have enough legal and technical staff to enforce existing laws. With additional qualified staff and funds, greater attention could be devoted to a planned program of pollution abatement and enforcement, preferably on a basin-wide approach.

EXECUTIVE FUNCTIONS

PROGRAM PLANNING INTERAGENCY COORDINATION PUBLIC INFORMATION

PROGRAM PLANNING

Program Planning is essential for good program management. It should consist of identifying the mission of the agency, determining the objectives to be achieved during a given time frame, allocating resources to accomplish those objectives and measuring accomplishments. The Department of Health participates actively in this type of program planning within the limits of available staff and funding resources. The lack of staff in the Division of Water Pollution Control (DWL&F) has largely precluded any substantial program planning effort other than that necessary to qualify for Federal program grant assistance under Section 7 of the Federal Water Pollution Control Act, as amended.

INTERAGENCY COORDINATION

Water pollution control affects and is affected by, a number of State activities, e.g., State Planning, Highway Construction, Health, Development, Recreation, Agriculture, etc., which have legal or implied interest in water pollution. Consequently, it is essential that good interagency coordination be maintained at the top management level. Interagency coordination between State and Federal agencies is also necessary as there are several Federal agencies involved in different aspects of water pollution control.

By virtue of its membership, the Stream Control Commission affords interagency coordination between the principal State agencies engaged in water pollution control activities. The Commission meets at least monthly, and frequently more often, to consider water pollution violations, problems, and industrial permit applications. The two agencies most directly involved in water quality management — the Division of Water Pollution Control (DWL&F) and the Bureau of Environmental Health (SDH) — cooperate extensively on problems of mutual concern and overlapping jurisdiction.

PUBLIC INFORMATION

In the final analysis, success or failure of the State's water pollution control effort will depend on the public. It is imperative, then, that the public be well informed so that it can express its voice intelligently and effectively in decisions affecting the quality of its environment. A State water pollution control agency should have the capability of keeping the public informed of the agency's programs, what impact these programs will have on the environment, and what the public must do to gain the maximum benefit from these programs.

The State agencies do not engage actively in the publication of the types of information described above. Both the Division of Water Pollution Control (DWL&F) and the Bureau of Environmental Health (SDH) prepare portions of the Biennial Reports of their respective agencies. Interviews with the press are granted upon request and agency personnel make frequent public appearances before interested professional and citizens groups. Funds for public information activities are severely limited.

RECOMMENDED PROGRAM

**BUDGET AND STAFF
PROGRAM FUNCTIONS
EXECUTIVE FUNCTIONS**

In order to develop the recommended program that follows, the State's present program was compared to the elements of an adequate State water pollution control program. To determine program, budget and staff needs, several factors were considered. Among these were: population, population density, percentage urbanization, number of industrial and municipal dischargers and treatment facilities, miles of streams, stream quality, hydrology, length of coastline and estuarine area, organizational arrangements and specific pollution problems. Some of the most extensive pollution problems result from complex industrial wastes which were also taken into consideration in developing the following recommendations.

BUDGET AND STAFF

1. It is apparent from that study that Louisiana's water pollution control staff and budget must be significantly increased to meet both the present and future demands for water quality

protection and enhancement. The principal water pollution control agencies of the State are authorized to perform a variety of functions and take actions to prevent and control water pollution; however, due to the lack of adequate budget and staff resources, many of these functions and supporting activities are presently accomplished at less than effective levels. The following recommendations indicate the staff and budget required for an optimum water pollution control program; one capable of dealing effectively with the many complex water pollution problems facing Louisiana.

The State's budget and staff should be expanded to \$1.795 million and 138 man-years of full-time staff. Such an expansion cannot be accomplished immediately; therefore, it is recommended that the increase be phased over a three-year period. Table I summarizes a suggested breakdown of this phased program, and the required resources to perform the various program functions.

TABLE 1
RECOMMENDED WATER POLLUTION CONTROL BUDGET AND STAFF

Program Element	Present FY 1971		Recommended FY 1972		Recommended FY 1973		Recommended FY 1974	
	Budget*	M.Y. ^{1/}	Budget*	M.Y.	Budget*	M.Y.	Budget	M.Y.
Surveillance	400 ^{2/}	38 ^{2/}	590	47	790	60	930	72
Water Quality Planning	0	0	130	7	145	10	100	7
Water Pollution Control Facilities	85	10	180	11	195	15	260	20
Enforcement	-	-	55	4	100	7	125	9
Laboratory Support	-	-	150	16	220	20	290	25
Executive	30.6	2	45	5	60	4	90	5
TOTALS	515.6^{3/}	50	1,150^{3/}	90	1,510^{3/}	116	1,795^{3/}	138

* Thousands of Dollars

1/ Present effort includes 28 man-years of full-time staff and 23 man-years contributed by personnel assigned less than full-time to water pollution control.

2/ Includes enforcement activities, laboratory support and special water quality studies.

3/ Includes both State funds and Federal grant funds under Section 7 of the Federal Water Pollution Control Act, as amended.

NOTE: Present FY 1971 budget and man-years consists of combined Division of Water Pollution Control (DWL&F) and Bureau of Environmental Health (SDH) water pollution control activities. Other state agencies represented on the Stream Control Commission contribute an estimated 14 man-years of part-time water pollution control effort. Proposed budgets and staff represent total water pollution control effort.

2. Concurrent with the increase in budget and positions should be the development of competitive salaries for highly skilled technical categories. This is essential if the State is to attract professional employees. The recommended budget is based on the premise that these competitive salaries will be paid. It will do little good to increase the budget and positions if the State cannot recruit qualified personnel to fill these positions.
3. Table 2 lists the suggested requirements for an adequate water pollution control staff for Louisiana. These are listed by function and phased over the suggested three-year period.

In addition to the overall need of significant staff expansion, a broader range of professional and technical skills is needed. A sound water pollution control laboratory support element

requires the services of bacteriologists, aquatic biologists, chemists and technicians. Geologists and engineers are needed to effectively plan and carry out a ground water surveillance program. Sanitary and industrial engineers and other technical disciplines are needed to accomplish the functions of the Surveillance and Facilities elements. Full-time attorneys should be assigned to the Enforcement element, along with engineers and technicians, to assist in the evaluation of data and the preparation of cases. The Planning element should be staffed with professional planners, economists, engineers and technicians familiar with all types of pollution problems encountered in Louisiana. Computer technologists and programmers should be available to effectively apply systems analysis and computer utilization techniques to data management and water pollution control functions.

TABLE 2
WATER POLLUTION CONTROL STAFFING REQUIREMENTS

Program Element/Position Title	PRESENT STAFF			PROPOSED STAFF				
	FY 1971			FY 1972			FY 1973	FY 1974
	Dept. of ^{1/} Health	Stream ^{2/} Control Comm.	Other Agencies	Dept. of Health	Stream Control Comm.	Other Agencies		
Water Quality Planning								
Supervisory Planning Engineer				1			1	1
Engineer	1		1*		1		1	2
Economist							1	1
Sanitary Engineer				1			1	
Environmental Engineer							1	
Engineer Technician				1	1		2	1
Draftsman							1	1
Clerical				1	1		2	2
Facilities								
Supervisory Engineer	1	1		1	1		2	2
Sanitary Engineer	1*			1			1	1
Staff Engineer			2*		2	1	5	7
Engineer Technician	1*			1			1	2
Training Officer	1			1			1	1
Geologist			1*			1	1	1
Training and Certification Technician								1
Clerical				1	1		3	4
Surveillance and Monitoring								
Regional Engineer	2*			3*				
Supervisory Engineer					5		11	13
Engineer		1	1*	2	6		12	13
Sanitarian	1							
Engineer-in-Training	1							
Parian Sanitarian/Waste Disposal								
Investigator	6*	8	4*	6*	7	1	16	20
Biologists		5	3*		5		6	7
Engineer Technician				1	2		3	3
Geologist			2*		1	2	3	3
Computer Technologist					1		1	1
Clerical				2	3		8	11
Laboratory Support								
Laboratory Director	1*			1*			1	1
Supervisory Chemist	2*	1		2*	1		2	3
Chemist	2*	2		2*	1		4	5
Aquatic Biologist					1		2	2
Bacteriologist	1*			1*			1	2
Laboratory Technicians	4*			4*	2		7	9
Clerical					1		2	3
Enforcement								
Attorney					1		1	2
Staff Engineer					1		2	1
Biologist							1	1
Geologist					1		1	1
Clerical					1		2	2
Executive								
Division Chief		1			1		1	1
Assistant Chief		1			1		1	1
Bureau Director	1*			1*			1	1
Assistant Director							1	1
Secretarial	2	2		1	1		2	2
Administrative Assistant								1
Public Information Specialist								1
TOTALS	28	22	14	35	50	5	116	138

1/ Bureau of Environmental Health (Louisiana Department of Health).

2/ Division of Water Pollution Control (Department of Wildlife & Fisheries).

* Indicates composite man-years of effort contributed by staff who contribute less than full-time to water pollution control functions.

NOTE: Proposed staff requirements reflect total water pollution control effort and not organizational alignment.

PROGRAM FUNCTIONS

WATER QUALITY PLANNING
WATER QUALITY STANDARDS
WATER POLLUTION CONTROL
FACILITIES
SURVEILLANCE
LABORATORY SUPPORT
ENFORCEMENT

WATER QUALITY PLANNING

1. Greater emphasis should be given to overall water quality management planning. Adequate planning staff should be provided immediately so that the required river basin, regional and metropolitan plans can be developed and certified to the Environmental Protection Agency to insure that the treatment plants will contribute to effective cleanup of entire river basin systems, in order to qualify applicants in the State for construction grants under the new Federal regulations.
2. There should be developed an effective State planning assistance program to local government that will encourage the development and implementation of regional treatment systems.

WATER QUALITY STANDARDS

1. The water quality standards should be reviewed and revised to fully incorporate the Water Quality Criteria recommended by the National Technical Advisory Committee.
2. The implementation plan should be revised, expanded and updated to indicate corrective measures needed beyond conventional secondary treatment.
3. The implementation plan should also address itself to special problems such as heavy metals, pesticides, vessel pollution and oil and hazardous materials.

WATER POLLUTION CONTROL FACILITIES

1. The present permit systems should be expanded and refined to include effluent standards for both municipal and industrial discharges. This would eliminate any inequities which may result from the present systems. All applicable municipal and industrial discharges should be placed under permit. The permit system for subsurface disposal of wastes should be strengthened to include more rigid requirements and more adequate monitoring of disposal wells.
2. The plan and specification review functions should be expanded to handle the increased construction of municipal and industrial treatment plants to meet the water quality standards implementation plan requirements.
3. Mandatory certification of waste treatment plant operators should be adopted by the State. Concurrently, the waste treatment plant operator training program should be expanded and new programs developed based on needs made apparent by plant inspections, monthly operating reports, effluent sampling, plant performance tests, and stream quality monitoring.
4. The technical assistance function should be expanded to aid treatment plant operators in solving difficult operating problems that could seriously affect plant efficiency.

SURVEILLANCE

1. There is an immediate need for a system to provide efficient collection, evaluation and dissemination of water quality monitoring data. If these data are to be meaningful, samples should be collected routinely on a weekly, semi-weekly or monthly basis depending on stream size and potential pollution problems. A summary of this data should be published annually.
2. The State should expand its present water quality monitoring network to include additional surface water, estuarine and coastal waters, and ground water monitoring stations.

A thorough evaluation of the numbers, types, and locations of monitoring stations should be undertaken to assure adequate knowledge of the quality of all the State's waters.

3. Every municipal and industrial waste treatment plant in the State should be inspected on a quarterly or semi-annual basis, depending on type and size of plant, and a detailed 24-hour technical inspection consisting of a performance or efficiency test should be conducted semi-annually or annually. The inspection schedule should be developed sufficient to correct any operational problems that are inhibiting plant efficiency.

LABORATORY SUPPORT

1. The laboratory element should be substantially expanded to accommodate the increased workload of an adequate surveillance program. This will require additional technically qualified personnel.
2. A routine analytical quality control program should be performed to validate the data for enforcement actions.

ENFORCEMENT

1. The State's staff should be expanded to include two full-time attorneys for water pollution control.
2. Further, there is a need for more professional technical staff to perform the enforcement functions. Expansion and refinement of the surveillance and inspection facilities will greatly assist in providing a good base for enforcement action. The proposed expansion in staff will enable the State to develop a well-planned program of positive action.

EXECUTIVE FUNCTIONS

PROGRAM PLANNING

INTERAGENCY COORDINATION

PUBLIC INFORMATION

PROGRAM PLANNING

As the staff and budget increase, a program planning function should be developed to define short and long-term objectives and allocate resources to accomplish these objectives and measure accomplishments. Another facet of the program planning function is the development, monitoring and coordination of research and development efforts being conducted by a variety of institutions throughout the State.

INTERAGENCY COORDINATION

In order to clarify certain portions of the law pertaining to water pollution control, official inter-agency agreements between such agencies as the Department of Health, the Department of Conservation, the Department of Wild Life and Fisheries, the Department of Agriculture, the Department of Public Works, and the Stream Control Commission should be developed. These agreements should clearly identify authority and responsibility and indicate in detail what specific action should be taken in various situations by the cooperating agencies.

PUBLIC INFORMATION

A public information function should be established, staffed by a full-time Public Information Officer, to develop various publications to communicate the activities and accomplishments of the State's water pollution control program and develop sound public relations liaison with the news media, legislature and the public.

QUESTIONNAIRE AND TABULATED RESULTS

Numerous interviews were conducted as a part of this study, and questionnaires were distributed to individuals, interest groups and others representing a broad range of backgrounds and interests in the State. The questions included in the survey and the tabulated results are listed below. As noted in all cases, there is broad support for improving and expanding Louisiana's water pollution control program.

1. What do you consider the major water pollution problems in Louisiana? Rank in numerical order.
 1. Industrial wastes
 2. Municipal wastes
 3. Oil and gas wastes
 4. Agricultural wastes
 5. Thermal wastes
 6. Other (specify)
2. Do you consider Louisiana's Water Pollution Control Program adequate?

Yes - 10% No - 90%
3. If not, what elements of the Program need strengthening, i.e. budget, staff, enforcement, surveillance, etc.?
 1. Enforcement
 2. Budget
 3. Staff
 4. Surveillance
 5. Salary levels
 6. Coordination between regulatory agencies
 7. Industrial waste control
4. How do you suggest these elements be strengthened?
 1. Increased budget and staff for regulatory agencies
 2. More active enforcement of existing laws
 3. Increased public awareness
 4. Increased Federal funds
5. What do you consider the most serious restraints to strengthening the Water Pollution Control Program?
 1. Apathy on part of elected officials
 2. Cost
 3. Political pressure and special interests
 4. Lack of adequate resources for regulatory agencies
6. Would you support a significant increase in budget and staff for the agencies responsible for pollution control in order to accomplish the improvements noted above?

Yes - 100% No - 0%
7. Would you favor utilizing funds from some other State activities for this purpose?

Yes - 95% No - 5%
8. What do you believe is the best means of financing an adequate water pollution control program?
 1. User tax
 2. Tax on industry
 3. Direct appropriation
 4. State conservation fund
 5. More Federal money
 6. Severance tax
 7. Tax incentives
9. Do you consider present State laws adequate for controlling pollution?

Yes - 30% No - 70%
10. If no, what are some areas needing legislation?
 1. More enforcement power and heavier fines
 2. Allow public to bring suit against polluters
 3. Restructure and update tax base
 4. Upgrade and strengthen water quality standards